

## **AMENDMENTS TO THE CLAIMS**

Please amend the claims as follows:

1-36. (Canceled)

37. (Previously Presented) A method of performing electrophoresis comprising:  
attaching a first conductive element and a second conductive element to a microchip  
having at least one microfluid thereon, wherein said microchip comprises:

at least one main separation channel formed in a channel forming medium, said  
main channel containing at least one microfluid;

at least one detecting channel containing a first conductive wire, fiber or paste for  
performing electrochemical detection, said detecting channel being formed in said channel  
forming medium and adjoining said main channel;

and at least one reservoir containing said second conductive element to provide a  
reference to said first conductive element, said reservoir being formed in said channel forming  
medium and containing waste; and

applying continuous or pulsed amperometric detection to said microchip using said  
conductive elements,

wherein specimens within said microfluid migrate toward said first conductive wire and, wherein  
electrical contact with said first conductive wire, fiber or paste generate a measurable signal.

38. (Previously Presented) The method of claim 37, wherein said detecting channel  
intersects said main channel.

39-42. (Canceled)

43. (Previously Presented) The method of claim 37, wherein said channel forming medium  
comprises a polymeric material.

44. (Previously Presented) The method of claim 45, wherein said channel forming medium  
comprises poly (methylmethacrylate) or poly (dimethylsiloxane).

45. (Previously Presented) The method of claim 37, wherein at least one first conductive element and second conductive element comprise gold, platinum, palladium, copper, nickel, nickel alloy, carbon fiber or carbon paste.

46-52. (Canceled)

53. (Previously Presented) The method of claim 37, wherein said at least one detecting channel comprises a plurality of detecting channels.

54. (Previously Presented) The method of claim 37, wherein said specimens comprises a carbohydrate, an amino acid, a protein, an antibiotic, levoglucosan, creatinine, creatine, uric acid, an amine, a thiol, an alcohol, or a mixture thereof.

55-64. (Canceled)

65. (Previously Presented) The method of claim 37, wherein said continuous or pulsed amperometric detection provides an electrical potential across said microchip to provide separation and detection of at least one specimen in said microfluid.

66. (Previously Presented) The method of claim 65, wherein said electrical potential applied for separating the specimens contained in said microfluid comprises approximately +100V to approximately +5000V.

67-69. (Canceled)

70. (Previously Presented) The method of claim 65, wherein said electrical potential applied for separating the specimens contained in said microfluid comprises approximately +0.4V to approximately +1.0V.

71-72. (Canceled)

73. (Previously Presented) The method of claim 37, further comprising injecting said microfluid into a channel of said microchip at an electrical potential of approximately +100V, or approximately +500V.

74. (Original) The method of claim 73, wherein the injecting step is performed for between approximately 1 second and approximately 1 minute.
75. (Canceled)
76. (Previously Presented) The method of claim 37, further comprising injecting said microfluid into a channel of said microchip at an electrical potential of approximately +160V.
77. (Previously Presented) The method of claim 37, further comprising injecting said microfluid into a channel of said microchip at an electrical potential of approximately +410V.
78. (Previously Presented) The method of claim 37, further providing, in combination with said at least one microfluid, an electrolyte solution.
79. (Original) The method of claim 78, wherein said electrolyte solution comprises borate.
80. (Previously Presented) The method of claim 78, wherein said electrolyte solution comprises a pH of approximately 7.1 to approximately 13 or a pH of approximately 9.45, or a pH of approximately 11, or a pH of approximately 12.
- 81-84. (Canceled)
85. (Original) The method of claim 54 wherein the specimen comprises glycated hemoglobin.
86. (Original) The method of claim 54 wherein the specimen comprises homocysteine.
87. (Original) The method of claim 54 wherein the specimen comprises uric acid.